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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,989	07/13/2001	Neil A. Cooper	ATI.0100820	3444

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EXAMINER	
LAO, SUE X	

ART UNIT	PAPER NUMBER
2194	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/904,989	COOPER, NEIL A.	
	Examiner	Art Unit	
	Sue Lao	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23-30* is/are allowed.

6)☒ Claim(s) *1-7, 10-14, 16, 18-22, 31, 35, 36* is/are rejected.

7)☒ Claim(s) *8,9,15,17 and 32-34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-36 are pending. This action is in response to the amendment filed 1/13/2005. Applicant has amended claims 1, 2, 4-7, 11-13, 16.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 1-22, 31-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of independent claims 1, 13, 31 raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Independent claims 1, 13, 31 do not appear to require any computer hardware to implement the claimed invention. These claims appear to define the metes and bounds of an invention comprised of software alone. There is no support (i.e., explicitly claimed computer hardware) in the body of the claims. Software alone, without a machine, is incapable of transforming any physical subject matter by chemical, electrical, or mechanical acts. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. In re Schrader, 22 F.3d 290 at 294-95, 30 USPQ2d 1455 at 1458-59 (Fed. Cir. 1994). Transformation of data by a machine constitutes statutory subject matter if the claimed invention as a whole accomplishes a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d 1368, 1373, 47 USPQ2d 1596 at 1600-02 (Fed. Cir. 1998).

MPEP 2106. State Street required transformation of data by a machine before it applied the "useful, concrete, and tangible test." However, State Street does not hold that a "useful, concrete and tangible result" alone, without a machine, is sufficient for statutory subject matter. State Street, 149 F.3d at 1373, 47 USPQ2d at 1601.

Claims 1-22, 31-36 are rejected under 35 U.S.C. 101 because the claimed invention, appearing to be comprised of software alone without claiming associated computer hardware required for execution, is not supported by either a specific and substantial asserted utility (i.e., transformation of data) or a well established utility (i.e., a practical application).

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-22, 31-36 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22, 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are computer hardware necessary to execute the claimed software and render the invention operative.

7. Claims 1-4, 7, 10, 13, 14, 20, 21, 31, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al (U S Pat. 5,491,813) in view of Kathail et al (U S Pat. 5,802,365).

As to claim 1, Bondy teaches a method comprising the steps of:

device-independent driver code (graphic packages 56, 57, 58), wherein the device-independent driver code forms a first portion of a display driver (code which interacts with applications 51, 52, 53, col. 4, lines 27-42);

receiving a device identifier associated with a particular device (Silicon Graghics, graPHIGS, col. 4, lines 55-58);

identifying a particular device-specific driver portion (device specific code 81, or 82) from a plurality of driver portions associated with the device identifier (device specific code 81, 82, ..., 92, col. 4, lines 27-42); and

particular device-specific driver portion (device specific code), wherein the device-specific driver portion forms a second portion of the display driver (code which interact with display adapter A, B, ..., E, fig. 1, 2). See col. 2, lines 11-53; col. 4, line 18 – col.5, line 45; col. 9, line 41 – col. 10, line 16.

Bondy does not explicitly teach that the device-independent driver code and the particular device-specific driver portion are loaded into kernel mode memory.

Kathail teaches driver code management (code fragment manager 40 including driver loader library DLL 45), including loading (load drivers) device-independent driver code (load generic device driver, load family, col. 9, lines 15-31, col. 21, lines 21-40) and the particular device-specific driver portion (native device driver cod fragment, col. 10, lines 14-55) are loaded into kernel mode memory. See col. 21, line 1-40; col. 26, line 28 – col. 27, line 30. Given the teaching of Kathail, one of ordinary skill in the art would have been motivated to load device-independent driver portion and device-specific driver portion (driver1) into kernel mode memory in Bondy because this would have reduced the problem of configuring proper driver with its associated device (col. 1, line 63 - col. 2, line 34).

As to claim 2, Bondy teaches requesting a device identifier (Silicon Graghics, graPHIGS) to identify the particular device (graphic devices), after the step of loading device-independent driver code into kernel mode memory and before the step of receiving the device identifier (col. 4, lines 55-58).

As to claims 3, 4, 20, 21, 35, Bondy teaches the device identifier includes an application-specific integrated circuit identifier / a graphics chip identifier (Silicon Graghics Inc., GL, IBM graPHIGS, col. 4, lines 55-58).

As to claim 7, Bondy teaches calling a function to load a block of executable code in kernel mode memory (dynamic binding, col. 5, line 62 – col. 6, line 6).

As to claims 10, 14, Bondy teaches the device-independent driver code includes two-dimensional graphics functions (2-D model 56).

As to claim 13, note discussion of claim 1, and note the equivalence of device-independent functions / device-independent driver code. Bondy further teaches device-independent functions are capable of supporting a plurality of different display devices (package 56 supports devices A, B, C. D represented by the respective adapters); a plurality of device-specific driver portions (device specific code 81, 82, ..., 92, col. 4, lines 27-42), each only capable of supporting a portion of the plurality of different display devices (device specific code 81, 82, 83, 84 support devices A, B, C. D respectively). Note claim 1 for second function to load and for kernel mode memory.

Regarding a first function to request for a device identifier, wherein the device identifier is capable of identifying a particular display device of the plurality of different display devices, Bondy teaches device identifier (Silicon Graghics Inc., GL, IBM graPHIGS, col. 4, lines 55-58) capable of identifying a particular display device (respective graphic adapters). Bondy uses such device identifiers to determine the corresponding device-specific driver code (81, 82, ..., 92) to be bond/loaded (col. 3, lines 34-54). Therefore, including a requesting sub-step to obtain/determine such device identifiers would have been obvious.

As to claim 31, it is a program product claim of claim 13, thus note claim 13 for discussion.

8. Claims 5, 6, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al in view of Kathail et al as applied to claims 1, 13 and further in view of Keller et al (U S Pat. 5,752,032).

As to claims 5, 6, 18, 19, Keller teaches device driver architecture, wherein a hardware-specific driver portion includes direct draw functions (DD 66), and direct 3D functions (68 including D3D). See col. 7, lines 46-60.

Therefore, it would have been obvious to include direct draw functions and direct 3D functions into Bondy as modified. One of ordinary skill in the art would have been motivated to do so because this would have provided virtualized device context/state management, enhancing context switching during operations (col. 3, lines 37-51).

9. Claims 11, 12, 22, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al in view of Kathail et al as applied to claims 1, 13, 31 and further in view of Schoening et al (U S Pat. 6,226,788).

As to claims 11, 12, 22, 36, Schoening teaches device driver management, including locating a name associated with the device-specific driver portion in a table using the device identifier (device type value), comparing versions associated with functions of the device-specific driver portion to versions expected (device mapping table) through an application program interface (device mapper operations). See col. 16, line 50 – col. 17, line 59. Given the teaching of Schoening, one of ordinary skill in the art would have been motivated to include locating and comparing into Bondy as modified because this would have allowed new devices to be added without requiring revision of the applications (col. 3, lines 24-33).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bondy et al in view of Kathail et al as applied to claim 13 and further in view of Shirakabe et al (U S Pat. 5,136,709).

As to claim 16, Shirakabe teaches loading device drivers, including determining addresses (address) associated with functions of the particular device-specific driver portion (col. 8, lines 27-53). Given the teaching of Shirakabe, one of ordinary skill in the

art would have been motivated to include determining addresses into Bondy as modified because this would have provided independent configuration of the driver and the kernel (col. 10, lines 20-29).

11. Claims 23-30 are allowed.

12. Claims 8, 9, 15, 17, 32-34 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101 and 112, set forth in this Office action.

13. Applicant's arguments filed 1/13/2005 have been considered but are moot in view of the new ground(s) of rejection.

Kathail is cited to teach loading (load drivers) device-independent driver code (load generic device driver, load family, col. 9, lines 15-31, col. 21, lines 21-40) and the particular device-specific driver portion (native device driver cod fragment, col. 10, lines 14-55) are loaded into kernel mode memory (code fragment manager 40 including driver loader library DLL 45). Col. 21, line 1-40; col. 26, line 28 – col. 27, line 30.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (571) 272-3764. A voice mail service is also available at this number. The examiner's supervisor, SPE Meng-Ai An, can be reached on (571) 272 3756. The examiner can normally be reached on Monday - Friday, from 9AM to 5PM. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jun 10, 2005

SUE LAO
PRIMARY EXAMINER